

What Is Claimed Is:

1. A linear motor and its progressive movement or movement control, in particular for modular conveyor systems having straight and curved path sections that form a path, having at least one secondary component (7), which is supplied via an energy and information transmission interface (3, 4, 5) and includes parts of the controller; and at least one primary component (8) having field-generating coils (10) in concentrated or overlapping windings, which are lined up next to each other along a predefined path, wherein the secondary component (7) has at least one permanent magnet and a signal-processing device (6) having a progressive movement or movement controller which generates at least one setpoint which is relevant with respect to the coil controller (9), the setpoint being supplied via a setpoint interface (1) as variable used for the commutation by the secondary component of a coil controller (9), which is stationary relative to the primary component (8), and means being provided for the rigid support of the secondary component, which guide the secondary component along the predefined path.

2. The linear motor as recited in Claim 1, wherein the secondary component (7) receives movement-state information, preferably corresponding to the speed and/or acceleration and/or the relative or absolute position and/or the shear force, via at least one sensor interface (4) from a movement-state sensor (12) mounted in the region of the primary component (8).

3. The linear motor as recited in Claim 2, wherein the secondary component (7) receives movement setpoints, preferably corresponding to the speed and/or acceleration and/or the relative or absolute position and/or the shear force, from at least one control device, via at least one

control interface (5) mounted in the region of the primary component (8).

4. The linear motor as recited in Claim 3, wherein at least one control device is organized in a decentralized manner and includes control modules that are situated in the region of the primary components.

5. The linear motor as recited in Claim 3 or 4, wherein the control device administers specific features of at least one secondary component (7), preferably identifying features, for the control thereof, and transmits and receives via a control interface (5).

6. The linear motor as recited in Claim 5, wherein the signal-processing device (6) of the secondary component (7) administers specific features of the secondary component (7), preferably identifying features, for the control thereof, and transmits and receives via a control interface (5).

7. The linear motor as recited in Claim 5 or 6, wherein at least one identifying feature is a unique address that addresses at least one secondary component (7).

8. The linear motor as recited in one of the Claims 1 through 7, wherein the control interface (5) or the sensor interface (4) or the setpoint interface (1) is designed to be non-contacting.

9. The linear motor as recited in Claim 8, wherein at least one of the interfaces (1, 4, 5) is designed as infrared interface and the sensor system is optionally shielded from the environment in a fluid-tight manner by a transparent seal.

10. The linear motor as recited in Claim 8 or 9, wherein at least one interface (1, 4, 5) is designed as inductive interface.

11. The linear motor as recited in one of the Claims 8 through 10, wherein at least one interface (1, 4, 5) is designed as radio interface.

12. The linear motor as recited in one of the Claims 2 through 11, wherein at least two interfaces, preferably the control interface (5) and/or the sensor interface (4) and/or the setpoint interface (1), are combined to form at least one uniform interface.

13. The linear motor as recited in one of the Claims 1 through 12, wherein the setpoint generated by the signal-processing device belongs to a single setpoint category.

14. The linear motor as recited in Claim 13, wherein the setpoint generated by the signal-processing device is a position setpoint or a speed setpoint or an acceleration setpoint (current setpoint) or a voltage setpoint.

15. The linear motor as recited in one of the Claims 1 through 12, wherein the setpoint generated by the signal-processing device is a combination of the setpoint categories listed in Claim 14.

16. The linear motor as recited in one of the Claims 1 through 15, wherein the energy supply (3) of the signal-processing device (6) of the secondary component (7) is ensured by a single type of energy source.

17. The linear motor as recited in Claim 16, wherein the energy supply (3) of the signal-processing device (6) of the

secondary component (7) is an energy source affixed on the secondary component, preferably a chargeable accumulator or a non-chargeable battery or a solar cell system.

18. The linear motor as recited in Claim 16, wherein the energy supply (3) of the signal-processing device (6) of the secondary component (7) is an inductive energy interface (3), preferably an induction coil, which picks up electrical energy in a non-contacting manner via at least one coil which is stationary relative to the primary component.

19. The linear motor as recited in Claim 16, wherein a pick-up mounted on the secondary component (7) and in contact with the primary component (8) conveys the energy to the signal-processing device (6) of the secondary component (7), preferably via a sliding contact or roller contact.

20. The linear motor as recited in Claim 16, wherein the energy for the signal-processing device (6) of the secondary component (7) is supplied by a cable connection.

21. The linear motor as recited in one of the Claims 1 through 15, wherein the energy supply of the signal-processing device (6) of the secondary component (7) is ensured by a combination of different types of energy sources, in particular as recited in one of the Claims 16 through 20.

22. The linear motor as recited in one of the Claims 1 through 21, wherein, for the non-contacting transmission of energy (3) and/or for the non-contacting transmission of information (1, 4, 5), the means, communicating with each other, of the secondary and primary component are situated opposite one another during operation, at the sides of the secondary component (7) and the primary component (8) facing one another.

23. The linear motor as recited in one of the Claims 1 through 22, wherein individual coils (10) on the primary component (8) are situated next to each other along the movement path of the secondary component (7), and the coil controller (9) supplies at least one individual coil with current.

24. The linear motor as recited in one of the Claims 1 through 22, wherein the secondary component (7) is moveably supported on the primary component with the aid of a rail having at least two tracks.

25. The linear motor as recited in one of the Claims 1 through 24, wherein the secondary component (7) has at least three rollers, two rollers being assigned to a shared track and a third roller being assigned to an additional track.

26. The linear motor as recited in Claim 25, wherein the third roller is flexibly supported on the secondary component.

27. The linear motor as recited in one of the Claims 1 through 26, wherein one control element embodied as half-bridge in each case is connected to an individual coil (9) mounted on the primary component (8) and feeds a coil current whose orientation and intensity are defined by a trigger signal as specified by the setpoint.

28. The linear motor as recited in Claim 27, wherein a number n of control element embodied as half-bridge is connected to one of n individual coils (9) mounted on the primary component (8) and is possibly embodied in a redundant manner to increase the functional reliability.

29. An industrial machine (30), in particular for automated lanes, which includes an industrial process, in particular for flat stocks, packaging and tools, the process including a linear movement, which a linear motor including movement control executes along a predefined path, the linear motor having at least one secondary component (7) and at least one primary component (8) having field-generating coils (10) in concentrated or overlapping windings,
wherein the secondary component (7) includes a signal processing device (6) with a movement controller, the signal-processing being supplied via an energy supply (3) of the secondary component and the movement controller generating a setpoint which is relevant with respect to the coil controller (9), the setpoint being supplied as variable used for the commutation to a coil controller (9), which is stationary relative to the primary component (8), via a setpoint interface (1).

30. The machine as recited in Claim 29, wherein the machine includes a plurality of secondary components which execute a process-synchronous movement according to predefined process rules.

31. The machine as recited in Claim 30, wherein the machine has at least five secondary components.

32. The machine as recited in one of the Claims 29 through 31, wherein the linear movement is predefined by a movement path that is formed by a plurality of primary components each having a predefined length in the manner of an assembly kit.

33. The machine as recited in Claim 32, wherein the movement path includes straight and/or curved primary components.

34. The machine as recited in one of the Claims 30 through 33, wherein a higher-order process controller monitors and controls movement sequences.

35. The machine as recited in Claim 34, wherein the process controller prevents a collision of secondary components.

36. The machine as recited in Claim 34 or 35, wherein the process controller implements an initialization of all secondary components upon start-up.

37. The machine as recited in one of the Claims 29 through 36, wherein the process controller monitors and controls the transition of the secondary components between two primary components so as to avoid transition interruptions and to ensure continuity in the position sensing.

38. The machine as recited in one of the Claims 29 through 37, wherein it involves a machine for packaging goods, in particular food items or luxury food stuffs.

39. The machine as recited in Claim 38, wherein its components are designed to be watertight or splash-proof.

40. The machine as recited in one of the Claims 29 through 39, wherein it involves a subfunction of a tool machine or the function of an automated lane or conveyor lane.

41. The machine as recited in one of the Claims 29 through 39, wherein it involves a printing machine.

42. The machine as recited in one of the Claims 29 through 39, wherein it involves a sheet-metal processing machine.